

# Supercomputing



Biomedical research relies on high-performance computing (HPC) to perform large-scale data analysis and intensive calculations. NIH's supercomputer Biowulf provides investigators with a world-class HPC environment for advancing biomedical science and enabling innovations in scientific research.

As of December 2019, Biowulf continues to be ranked in the top 500 most powerful supercomputers in the world by the TOP500 project and is the world's most powerful supercomputer solely dedicated to advancing biomedical research.

## WHAT BIOWULF OFFERS NIH

As a centrally funded service available to all Intramural Research Program scientists, Biowulf offers cost-effective and efficient high-performance computing services. Almost one-half of IRP labs use Biowulf to process and analyze their research data in areas such as genomics, computational chemistry, and cryo-electron microscopy imaging.

## **Power & Flexibility**

Biowulf provides both immense computing power and a wide array of applications to meet the varied needs of IRP investigators.

## **Decreased Processing Time**

The ability to process large numbers of datasets in parallel can reduce time-to-completion by orders of magnitude—allowing investigators to spend more time on analysis.

## **Increased Speed for Complex Computational Projects**

Biowulf has hundreds of graphics processing units (GPUs) which decrease the time it takes to complete numerically-intensive projects such as molecular dynamics, image processing, and deep learning.

## **Ease in Data Transfers**

A 100 Gbps connection to the NIH network allows for fast, secure, and reliable data transfers.

## **Secure & Ample Storage**

Researchers have access to petabytes of highly secure storage to meet the needs of even the most demanding projects.

## **Classes & Seminars**

Training opportunities are available through online self-paced videos, hands-on classes, and seminars presented by IRP investigators.

# **RESOURCES**

[NIH HPC Systems](#)

# **CONTACT**

[CIT Supercomputing Team](#)